V. Remarks and Conclusion

Claims 32 and 64-68 are currently pending. Claim 32 has been amended. No estoppel should result from said amendments. Claim 68 has been cancelled. Applicants expressly reserve the right to pursue the cancelled and the non-elected subject matter in a divisional application(s).

In line item4, the Examiner has objected to various specification informalities, including missing SEQ ID's, use of trademarks, and the inclusion of embedded hyperlinks. Applicant has amended the specification to clear all of these objections and respectfully requests reconsideration. No estoppel should result from these amendments as they were typographical in nature. Further, Applicant has submitted replacement figures for Figures 1, 2, and 3. The sheets are labeled Replacement Sheet. As well, a new sequence listing is being submitted. No new matter has been added in either the Replacement Sheets or the sequence listing.

In line item 5, the Examiner has rejected Claims 32-35 and 64-68 under the written description requirement of 35 USC §112, 1st ¶. The Examiner contends that there is no written description for amino acid sequences that are 80, 85, 90, or 95% homologous to SEQ ID NO: 2. While Applicant reserves the right to pursue the subject matter in a divisional, as it has never been the law that Applicant must shown each and every embodiment to comply with the written description, Applicant has cancelled the subject matter to further the prosecution of the case. In light of such cancellation, Applicant respectfully requests reconsideration.

In line item 6, the Examiner has rejected Claims 32-35 and 64-68 under the enablement requirement of 35 USC §112, 1st ¶. The Examiner contends that there is no enablement for

amino acid sequences that are 80, 85, 90, or 95% homologous to SEQ ID NO: 2. While Applicant reserves the right to pursue the subject matter in a divisional, as it has never been the law that Applicant must shown each and every embodiment to comply with the enablement requirement, Applicant has cancelled the subject matter to further the prosecution of the case. In light of such cancellation, Applicant respectfully requests reconsideration.

In line item 7, the rejection is believed overcome for the reasons stated above, after the amendments. The Examiner asserts that the Schetters article discloses a vaccine comprising a B. canis associated protein in a supernatant. The Examiners contends that SEQ ID NO: 2 of Applicants' invention is an inherent property of the disclosed Schetters article supernatant. Applicants respectfully request reconsideration in light of this response. Applicant is claiming an isolated protein.

Further, Applicant's response has adequately illustrated that Bcvir15 is not an exoantigen and that it is not present in the culture supernatant described by Schetters. Consequently, the publication of the supernatant does not, and cannot anticipate Bcvir15 of the present application as the discussion below will make clear.

Applicant is very familiar with this disclosure, as the assignee of the instant application and of the patent that originated from the teachings of the Schetter article are one in the same, Akzo Nobel. The proteins in the supernatant described in the Schetter article are known as exoantigens and are the subject of US patent 6,045,806.

To differentiate the Bcvir15 and Bcvir32 proteins of the invention from these exoantigens, immunoprecipitation experiments were performed and outlined in Example 2, the results of which are presented in Figure 8.

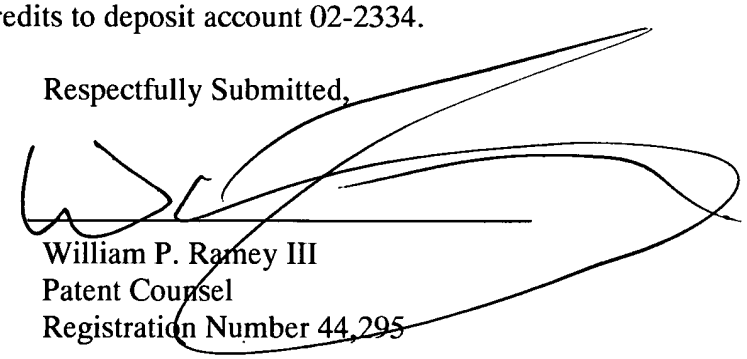
In brief: rabbit polyclonal antibodies were produced (p. 26) directed against E. coli expressed proteins of Bcvir15 (ORF 1) or Bcvir32 (ORF 2) (p. 25). Next, radioimmunoprecipitation assays of 35S labeled parasite cultures were performed (p. 27).

Results are described on pages 29-30 of the specification, and presented in Figure 8: in lanes 3, of Figure 8A and 8B, fractions of labeled antigens from the Babesia culture were incubated with a specific antibody. As is clear from these results, a band of about 15 kDa was specifically precipitated only in the total antigen fraction of panel A, but not in the exoantigen fraction of panel B. This is also described in the specification, on p. 29, ll. 23-27.

The exoantigens described by Schetters et al., are not recognized by an antiserum specific for the Bcvir15 protein of the invention. Therefore Bcvir15 is not an exoantigen, and is not similar to the proteins in US 6,045,806. Accordingly, Applicants respectfully request reconsideration.

In conclusion, Applicant believes the Claims are in a condition for allowance. Applicant respectfully requests that the Examiner contact Applicant's counsel with any questions. Please charge any required fees and credit any credits to deposit account 02-2334.

Respectfully Submitted,



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